EMI REGISTRY MANUAL

EMI Registry Team

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Contents

1 Overview

The EMI Registry is a federated service registry based on REST-ful interfaces. The major functionalities of the registry includes

2 Features

The registry provides following features:

- the service registration includes the management of the services' information.
- Powerful data back-end based on MongoDB
- Schema-free information model based on JSON (using GLUE2 entity names for specific attributes)
- Seam-less access: Plain HTTP interface to browse the service registrations
- Security
  - PKI governed authentication
  - Distinguished Name based authorization using XACML driven PDP

For more information about EMI visit http://www.eu-emi.eu.

3 Getting Started

Some intro here... This guide describes the installation and configuration for the binary release.

3.1 Prerequisites

To run EMI Registry, you need the SUN or OpenJDK Java 6 (JRE or SDK). If not installed on your system, you can download it from http://java.oracle.com

- Linux based operating system
- MongoDB[www.mongodb.org]

3.2 REST API (URI design)

The EMI Registry allows Services to register/publish their capabilities while the Service Consumers are able to find the deployed services.

This section contains the description of the REST-ful interface, that allows the management of the service information (or entries) by exposing the individual URIs.

3.2.1 Register new Services

`HTTP Method` : POST

`URI` : /serviceadmin

`Content Type` : application/json

`Security Implications` : Requires authenticated "and" authorized user to perform this operation

Request

The message must contain a JSON document, includes an array of the JSON objects (see below), each of which is a service entry in the EMI registry.

An example Service description

```
[
        {
                "Service_Name":"ComputingService",
                "Service_CreationTime":{"$date":"2011-07-21T11 ↩
                    :47:24Z"},
                "Service_Type":"job-management",
                "Service_Capability":["capability1","capability2"],
                "Service_QualityLevel":"production",
                "Service_Complexity":"complexity",
                "Service_Validity": 12313,
                "Service_Extensions":[{"key":"value"},{"key":"value ↩
                    "}],
                "Service_Endpoint_URL":"http://1",
                "Service_Endpoint_Capability":["capability1"," ↩
                    capability2"],
                "Service_Endpoint_Technology":"technology",
                "Service_Endpoint_InterfaceName":"interface",
                "Service_Endpoint_InterfaceVersion":["version1"," ↩
                    version2"],
                "Service_Endpoint_InterfaceExtension":["extension1 ↩
                    ","extension2"],
                "Service_Endpoint_WSDL":"http//1.wsdl",
                "Service_Endpoint_SupportedProfile":["profile1"," ↩
                    profile2"],
                "Service_Endpoint_Semantics":["semantic1"," ↩
                    semantic2"],
                "Service_Endpoint_HealthState":"ok",
                "Service_Endpoint_HealthStateInfo":"state info",
                "Service_Endpoint_ServingState":"production",
                "Service_Endpoint_StartTime":{"$date":"2011-07-21 ↩
                    T11:47:24Z"},
                "Service_Endpoint_IssuerCA":"issuer-dn",
                "Service_Endpoint_TrustedCA":["dn1","dn2","dn3"],
```

```
                "Service_Endpoint_DowntimeAnnounce":{"$date ↩
                    ":"2011-07-21T11:47:24Z"},
                "Service_Endpoint_DowntimeStart":{"$date ↩
                    ":"2011-07-21T11:47:24Z"},
                "Service_Endpoint_DowntimeEnd":{"$date":"2011-07-21 ↩
                    T11:47:24Z"},
                "Service_Endpoint_QualityLevel":"production",
                "Service_ExpireOn":{"$date":"2011-07-21T11:47:24Z"}
        },
        {
                "Service_Name":"ComputingService",
                "Service_CreationTime":{"$date":"2011-07-21T11 ↩
                    :47:24Z"},
                "Service_Type":"job-management",
                "Service_Capability":["capability1","capability2"],
                "Service_QualityLevel":"production",
                "Service_Complexity":"complexity",
                "Service_Validity": 12313,
                "Service_Extensions":[{"key":"value"},{"key":"value ↩
                    "}],
                "Service_Endpoint_URL":"http://2",
                "Service_Endpoint_Capability":["capability1"," ↩
                    capability2"],
                "Service_Endpoint_Technology":"technology",
                "Service_Endpoint_InterfaceName":"interface",
                "Service_Endpoint_InterfaceVersion":["version1"," ↩
                    version2"],
                "Service_Endpoint_InterfaceExtension":["extension1 ↩
                    ","extension2"],
                "Service_Endpoint_WSDL":"http//1.wsdl",
                "Service_Endpoint_SupportedProfile":["profile1"," ↩
                    profile2"],
                "Service_Endpoint_Semantics":["semantic1"," ↩
                    semantic2"],
                "Service_Endpoint_HealthState":"ok",
                "Service_Endpoint_HealthStateInfo":"state info",
                "Service_Endpoint_ServingState":"production",
                "Service_Endpoint_StartTime":{"$date":"2011-07-21 ↩
                    T11:47:24Z"},
                "Service_Endpoint_IssuerCA":"issuer-dn",
                "Service_Endpoint_TrustedCA":["dn1","dn2","dn3"],
                "Service_Endpoint_DowntimeAnnounce":{"$date ↩
                    ":"2011-07-21T11:47:24Z"},
                "Service_Endpoint_DowntimeStart":{"$date ↩
                    ":"2011-07-21T11:47:24Z"},
                "Service_Endpoint_DowntimeEnd":{"$date":"2011-07-21 ↩
                    T11:47:24Z"},
                "Service_Endpoint_QualityLevel":"production",
                "Service_ExpireOn":{"$date":"2011-07-21T11:47:24Z"}
        },
```

```
]
```

Important
The only mandatory attribute is **Service_Endpoint_URL**, which should be unique

Response

The response contains similar array of JSON Objects as it was in sent request, confirming the successful update.

`Status Code` : OK / 200

3.2.2 Updating the Service information

`HTTP Method` : PUT

`URI` : /serviceadmin

`Content Type` : application/json

`Security Implications` : Requires an authenticated "and" authorized user to perform this operation

Request

The request body contain a similar JSON array object as defined POST method that contains the description of the Services to be updated. The Service Entries identified by the *Service_Endpoint_URL* key in the individual JSON objects will be updated respectively.

Response

The response contains similar array of JSON Objects as it was in sent request, confirming the successful update.

`Status Code` : OK / 200

3.2.3 Delete existing Services

`HTTP Method` : DELETE

`URI` : /serviceadmin

`Security Implications` : Requires an authenticated "and" authorized user to perform this operation

Request

The Service Entry identified by the URL will be deleted from the database if the client is properly authorized and the method were allowed by the security plugins.

`Query Parameters` : Service_Endpoint_URL= <*service unique URL*>

Example : /serviceadmin?Service_Endpoint_URL=http://1

Response

`Status Code` : OK / 200

3.2.4 Querying the EMI Registry database

`HTTP Method` : GET

`URI` : /services/query

`Content Type` : application/json

Request

The request contains the key-value pairs separated by ampersand `&`

`Query Parameters` : AttributeName=<Attribute_Value>&AttributeName=<Attribute_Value>&...

Example : /services/query?Service_Type=eu.emi.es&Service_Endpoint_HealthState=ok

The additional parameters can also be added to restrict and/or paginate the result

`Additional Query Parameters` :

```
skip=Integer value
```

skip returns the result skipping the given number of entries

```
limit=Integer value
```

limit defines the maximum number of result containing the service entries

Response

The response contains an array of service entries packed in a JSON array object

`Status Code` : OK / 200

3.2.5 Querying the EMI Registry database GLUE 2.0 XML format

`HTTP Method` : GET

`URI` : /services/query.xml

`Content Type` : application/xml

Request

The request contains the key-value pairs separated by ampersand `&`

`Query Parameters` : AttributeName=<Attribute_Value>&AttributeName=<Attribute_Value>&...

Example : /services/query?Service_Type=eu.emi.es&Service_Endpoint_HealthState=ok

The additional parameters can also be added to restrict and/or paginate the result

`Additional Query Parameters` :

```
skip=Integer value
```

skip returns the result skipping the given number of entries

```
limit=Integer value
```

limit defines the maximum number of result containing the service entries

Response

The response contains an XML document containing service entries in GLUE 2.0 format

`Status Code` : OK / 200

3.2.6 Viewing the Service information model

This To view the GLUE 2.0's JSON flavored service model.

`HTTP Method` : GET

`URI` : /model

`Content Type` : application/json

Request

N/A

Response

JSON document, as described in the `/serviceadmin` POST method

`Status Code` : OK / 200

3.2.7 Monitoring the Registry

Allows registry users to view the registry status

`HTTP Method` : GET

`URI` : /ping

Request

N/A

Response

`Status Code` : OK / 200